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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/017,475 | 12/14/2001 | Geoffrey H. Jenkins | U0131/7009 RJP | 5215 |

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EXAMINER

MCKANE, ELIZABETH L

| | |
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| ART UNIT | PAPER NUMBER |
|----------|--------------|

1744

DATE MAILED: 12/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/017,475 | JENKINS ET AL. | |
| | Examiner | Art Unit | |
| | Leigh McKane | 1744 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 11, 12, 18 and 227 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11, 12, 18, 23-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Terminal Disclaimer

1. The terminal disclaimer filed on 05 October 2005 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,461,568 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 2, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Matschke (US 5,498,394).

With respect to claim 1, Matschke teaches a sterilizer/disinfector for sterilizing or disinfecting an object, comprising: a housing (See Figure 1', germicidal cleansing and drying apparatus formed by upper member 11 and lower member 12, which, together with the diffuser 17 mounted in second chamber 2, define working chamber 10); a light source disposed within the housing (See Figure 1; ultraviolet light source 14; See col. 5, line 59 to col. 6, line 8)., a light seal to block light output from the light source from exiting the housing (See Figure 2; portals 26 and 27 with plastic collars 27 and 28; See col. 6, lines 46-54 - plastic collars 27 and 28 act to prevent substantial leakage of ultraviolet light outside working chamber 10), wherein the object

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forms part of the light seal (See col. 6, lines 46-49 - openings or portals 26 and 27 in the working chamber 10 allow insertion of hands and arms [or medical tools (See col. 3, lines 9-10)] into the chamber); and an optical device, triggered by detection of completion of the light seal to a "certain degree," to enable light to be output from the light source (See col.8, lines 27-32 – operation of the ultraviolet light 14 is initiated when photoelectric momentary switch 24 indicates that there are objects such as hands or arms in the working chamber 10 [extended through portals 26 and 27 and plastic collars 27 and 28], e.g. the hands and arms [or medical tools 9col.3, lines 9-10)] – the objects to be sterilized).

As to claim 2, Matschke teaches the sterilizer/disinfector, wherein the light source emits ultraviolet light (See Figure 1., ultraviolet light source 14; See col. 5, line 59 to col. 6, line 8- industrial rated germicidal bulb with emission in the far ultraviolet wavelength, emits at 253.7 nm. This wavelength has been found to be particularly useful for destruction of pathogenic microorganisms. Intensity of the bulb is selected to produce desired level of ultraviolet radiation in chamber 10).

With respect to claim 23, Matschke teaches a device, comprising: a housing 12 having an opening (open top) for at least partially receiving an object. The device further includes a least one movable member 11 which attaches to the housing and is movable between an open and closed position (See Figures 1 and 2). An ultraviolet light source 14 within the device emits UV radiation and an actuator prevents the UV source from emitting radiation until an object is placed at least partially within the housing and the movable member is in its closed position.

4. Claims 1, 2, 4, 5, 26, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Eckhardt (US 6,461,568).

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Eckhardt teaches an apparatus for disinfecting objects with UV radiation. The apparatus 10 of Eckhardt includes a housing 12, a UV light source 14 disposed within the housing, and a light seal 34 to block light from the UV source from exiting the housing, wherein the object forms part of the light seal. See col.1, lines 59-65; Figures 3 and 4C. Furthermore, an optical device triggered by detection of completion of the light seal to a certain degree enables light to be output from the UV source. See col.3, lines 41-50; col.4, lines 55-65; col.5, lines 44-54. The UV radiation is delivered in pulses/flashes. See col.1, lines 59-61; col.6, lines 46-52.

5. Claims 18, 23, and 25 are rejected under 35 U.S.C. 102(b) as being anticipated by Bourque (US 5,127,521).

Bourque teaches a device for disinfecting an object wherein the device includes a housing 12, and two or more vanes 50 pivotally mounted to the housing wherein the vanes 50 enclose the object during sterilization. See col.3, lines 25-40 and lines 62-68; Figures 1 and 2. An ultraviolet source 80 is disposed with the housing for disinfecting objects 70 enclosed therein. A detector (switch 82) detects when a vane (movable member) 50 is in the closed position, enabling activation of the UV source.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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7. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Matschke in view of Clark et al. (U.S. Patent No. 5,786,598).

With respect claims 3-5, Matschke fails to teach that the light source is a flash lamp, the light output is pulsed, and that the light output has a duration of less than 10 milliseconds. Clark et al. teaches a flashlamp system that generates high-intensity, short-duration pulses of polychromatic light in a broad spectrum, with wavelengths selected between 120 nm and 2600 nm, e.g. within the ultraviolet radiation spectrum - 260 nm, and deactivates microorganisms within a container by illuminating the container with the pulses of light having been generated (col. 4, lines 39-51). Clark et. al. further teaches that the duration of the pulsed light output is in the range from 0.001 ms to 100 ms (col. 8, line 13). It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the flashlamp system of Clark et al. instead of the traditional lamp of Matschke since Clark et al. discloses that the flashlamp is capable of deactivating microorganisms to achieve a sterility assurance level of at least 10^{-6} , which would have been desirable when sterilizing the medical instruments of Matschke. See Clark et al, col.4, lines 49-51.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Eckhardt.

Eckhardt teaches emitting the UV radiation in flashes/pulses of less than 100 milliseconds (col.2, lines 51-53). Eckhardt also discloses that the “amount of ultraviolet light energy to sterilize an object is dependent on characteristics of the surface and the environmental conditions....” See col.2, lines 62-67. Therefore, it is deemed obvious to the skilled practitioner to optimize the pulse time as being a result effective variable recognized by Eckhardt.

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9. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bourque in view of Eckhardt.

Bourque teaches a device for disinfecting an object wherein the device includes a housing 12, and one or more vanes 50 pivotally mounted to the housing wherein the vanes 50 enclose the object during sterilization and intrinsically block light from escaping the housing. See col.3, lines 25-40 and lines 62-68; Figures 1 and 2. An ultraviolet source 80 is disposed with the housing for disinfecting objects 70 enclosed therein. A detector (switch 82) detects when a vane (movable member) 50 is in the closed position, enabling activation of the UV source. Bourque does not teach that the UV source 80 is a flash lamp.

Eckhardt, however, discloses a device for disinfecting objects similar to that of Bourque. The UV source 14 employed by Eckhardt is a flash lamp. As Eckhardt teaches that a flash lamp doesn't require a source of external power as a traditional UV lamp does (col.1, lines 32-39) and can be used with a battery and thus, is portable, one of ordinary skill in the art would have found it obvious to replace the traditional UV source of Bourque with the flashlamp of Eckhardt.

10. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. (US 6,132,784) in view of Clark et al..

Brandt et al. teaches an apparatus for disinfecting objects including a UV lamp 17, and two vanes 36 pivotally attached to a support for blocking light emitted by the lamp. See Figure 6 and col.5, lines 33-44. Brandt et al. is silent with respect to a housing and that the UV lamp is a flash lamp. Clark et al. discloses a flashlamp system that generates high-intensity, short-duration pulses of polychromatic light in a broad spectrum, with wavelengths selected between 120 nm and 2600 nm, e.g. within the ultraviolet radiation spectrum - 260 nm, and deactivates

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microorganisms within a container by illuminating the container with the pulses of light having been generated (col. 4, lines 39-51). It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the flashlamp system of Clark et al. instead of the traditional lamp of Brandt et al. since Clark et al. discloses that the flashlamp is capable of deactivating microorganisms to achieve a sterility assurance level of at least 10^{-6} . See Clark et al., col.4, lines 49-51. Furthermore, Clark et al. teaches a housing (tunnel) 18 for irradiating the objects to be sterilized. As an enclosure would have prevented further escape of radiation and recontamination of articles, it would have been obvious to enclose the apparatus of Brandt et al. within a housing or tunnel.

11. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Brandt et al. and Clark et al. as applied to claim 1 above, and further in view of Kawamura (US 4,877,967).

The combination *supra* is silent with respect to a hinged door at the entry and exit point of the housing. Nevertheless, this element is evidenced by Kawamura in a UV inspection apparatus. Kawamura teaches providing a tunnel having a UV irradiation means with hinged doors 5,6 at the entrance and exit of the tunnel. See col.3, lines 22-40. As Kawamura discloses that the hinged doors prevent light from passing into or out of the chamber it would have been an obvious modification to the apparatus of Brandt et al. as a further safety feature.

12. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bourque as applied to claim 23 above, and further in view of Kawamura.

Bourque does not disclose that the movable members 50 automatically move to the closed position upon placing an object within the housing. Kawamura discloses pivoting doors 5,6 which are tensioned by a spring 15 to automatically close behind an object passing

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therethrough. See col.3, lines 47-53. As Kawamura discloses that this arrangement reduces light escape from the housing, it is deemed an obvious modification to the invention of Bourque.

Response to Arguments

13. Applicant's arguments filed 05 October 2005 have been fully considered but they are not persuasive.

With respect to Matschke specifically, the arguments are not persuasive. Applicant argues that the switch of Matschke does not detect completion of a light seal to a certain degree because the UV light may be activated without regard to the degree of light sealing of the chamber (e.g. when a person with thin forearms inserts their hands into the chamber). However, it is noted that the claims require only that the optical device be triggered by detection of completion of the light seal "to a certain degree." This limitation does not require a complete light seal. Even when a person having thin forearms inserted their hands into the chamber through the portals, the light seal would be increased over that of the portals being completely open, thereby achieving "completion of the light seal to a certain degree".

14. Applicant's arguments with respect to claims 1-5, 11, 12, 18, and 23-27 have been considered but are moot in view of the new ground(s) of rejection.

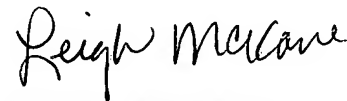
Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leigh McKane whose telephone number is 571-272-1275. The examiner can normally be reached on Monday-Thursday (5:30 am-2:00 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leigh McKane
Primary Examiner
Art Unit 1744

elm
22 December 2005